

## Patent Abstracts of Japan

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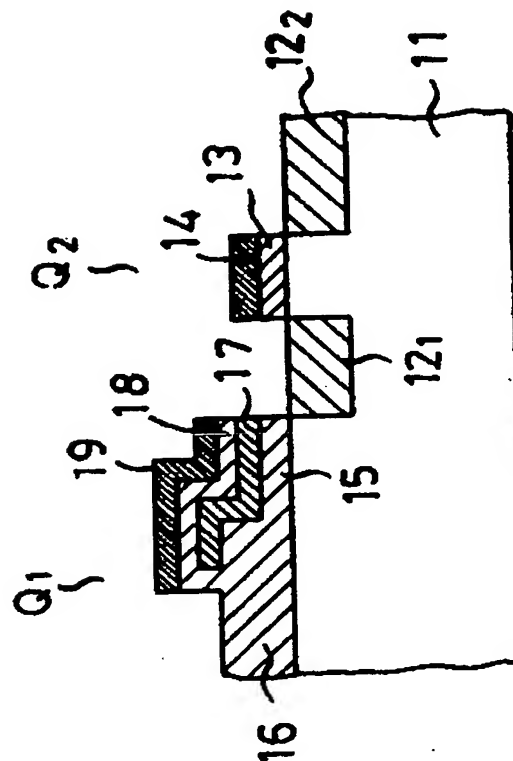
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TITLE : NONVOLATILE SEMICONDUCTOR  
MEMORY



**ABSTRACT :** PURPOSE: To attain high density and low power consumption of a nonvolatile semiconductor memory by forming a memory of an impurity region, an insulating layer, and an electrode layer or the like, constituted in a prescribed way on a substrate, and reading dynamically the stored electric charge.

CONSTITUTION: An n-channel 1st impurity region 12<sub>1</sub> and the 2nd impurity region 12<sub>2</sub> used as a bit line are provided on a p type silicon substrate 11 and a selection electrode layer 14 used as a word line is formed between the regions 12<sub>1</sub> and 12<sub>2</sub> via a gate oxide film 13. On the other hand, a control gate electrode layer 19 or the like via a gate oxide film 15, field oxide film 16, floating gate electrode layer 17 and a poly silicon oxide film 18 in constant with the region 12<sub>1</sub> is laminated to form the nonvolatile semiconductor memory. Through the constitution above, the presence of an electric charge of the layer 17 is read by the dynamic detection of a charge amount stored in a capacitor made of the layer 17 and the substrate 11, the source region of a storing transistor, its wiring and a decoder or the like are not required and the high density and low power consumption of the nonvolatile semiconductor memory are attained.

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